
Two New Species of *Scleria* Section *Scleria* (Cyperaceae) from the Neotropics

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ABSTRACT. Two new species are described: *Scleria skutchii* M. T. Strong & J. R. Grant, a scrambling, vinelike, branching, high-climbing sedge with sharp, spinulose leaf margins, pendulous inflorescences of purple spikelets, a long-stipitate hypogynium, and achenes with a curved apex, from Costa Rica and northwestern Colombia, related to *S. macbrideana* Gross; and *Scleria triquetra* M. T. Strong, an erect to ascending sedge that has trigonous achenes bearing tubercles with tufts of trichomes on the angles, from northeastern South America, related to *S. huberi* C. B. Clarke. A key to the scandent species of *Scleria* sect. *Scleria* in Central America and northwestern Colombia is provided, and an illustration, SEM photograph of the mature achene, and comparison to similar taxa are given for each species.

Earl Core's (1936) monumental treatment of the American species of *Scleria* Bergius and his (1965) treatment of the Guayana Highlands species laid a solid foundation for further study of species occurring in the Neotropics. Examination of specimens has led to the discovery of two new species in *Scleria* sect. *Scleria*. The genus is typified by *Scleria flagellum-nigrorum* Bergius. Section Euscleria of Core (1936), the nominate section of the genus which contains *S. flagellum-nigrorum*, is not permitted by the *International Code of Botanical Nomenclature*, Article 21.3 (Greuter et al., 1988). Species of *Scleria* sect. *Scleria* are distinguished from other species in the genus by having a 3-lobed hypogynium with entire lobes.

Scleria skutchii M. T. Strong & J. R. Grant, sp. nov. TYPE: Costa Rica. Puntarenas: Canton Golfito, Refugio Nacional de Fauna Silvestre Golfito, Golfito, along road (7 km long) from the soccer field to the microwave transmitter tower, 8°38'N, 83°11'W, 25 Dec. 1992, *Grant & Rundell 92-02087* (holotype, US sheet #3242501; isotypes, BM, CLEMS, CR, F, GH, K, MARY, MO, NY, P, VDB). Figures 1, 3B.

Species haec a *Scleria macbrideana* Gross differt foliorum pagina abaxiali pilosa; inflorescentiis (2-)5-10 paniculatis, pendulis, flexuosis; prophyllis basi longo-ciliatis in ramis lateralibus; spicularum pedicellis ad 1 cm longis; acheniis ovatis, apice anguste rotundo et leviter curvirostrato, pilis brevibus dispersis vel in lineis indistinctis.

Coarse perennial, with thick, nodose rhizome; vinelike, climbing or scrambling high over vegetation; roots coarse, thick. Culms trigonous, elongate, branching from upper nodes, to 10 m long, 3-5 mm wide, to 10 mm wide near base, scabrous to spinulose on angles, finely ribbed above, coarsely ribbed and channeled near base, glabrous to sparsely pilose. Leaves many; blades green, to 6 dm long, 4-14 mm wide, apex long-acuminate, abaxial side pilose, adaxial side glabrous except at base, a few hairs sometimes along the midvein, harshly spinulose along margins and midvein beneath, the barbs up to 0.5 mm long; sheaths green, closely overlapping in young foliage, finely veined, pilose to glabrescent at maturity, scabrous to spinulose on the angles, the convex contraligule firm, pubescent to glabrescent at recurved apex with hairs to 1 mm long. Inflorescence of (2-)5-10 axillary panicles from the upper sheaths; panicles borne on long, slender peduncles becoming pendulous at maturity; panicle branches smooth, or scabrous only near base, ascending, elongate, minutely scabrous on angles; bractlets linear-lanceolate to setaceous, scabrous, long-ciliate on margins at expanded base. Spikelets unisexual; pistillate spikelets elliptic to elliptic-obovate, 5-7 mm long, 3 mm wide, on slender, trigonous to subcompressed pedicels up to 1 cm long; staminate spikelets oblong-ovate, 3-4 mm long, 1-2 mm wide, usually on shorter pedicels than the pistillate, but sometimes up to 1 cm long. Pistillate scales 6-9 (including the reduced fertile scale); lower sterile scales ovate, 2-2.5 mm long, 1.5-2.0 mm wide; upper sterile scales widely ovate, 3.0-3.5 mm long, 3.5-4.5 mm wide, green with purple margins, at maturity becoming darker, usually tinged with purple, glabrous, ciliate along margins near base, the apex short-mucronate, scabrous, recurved at

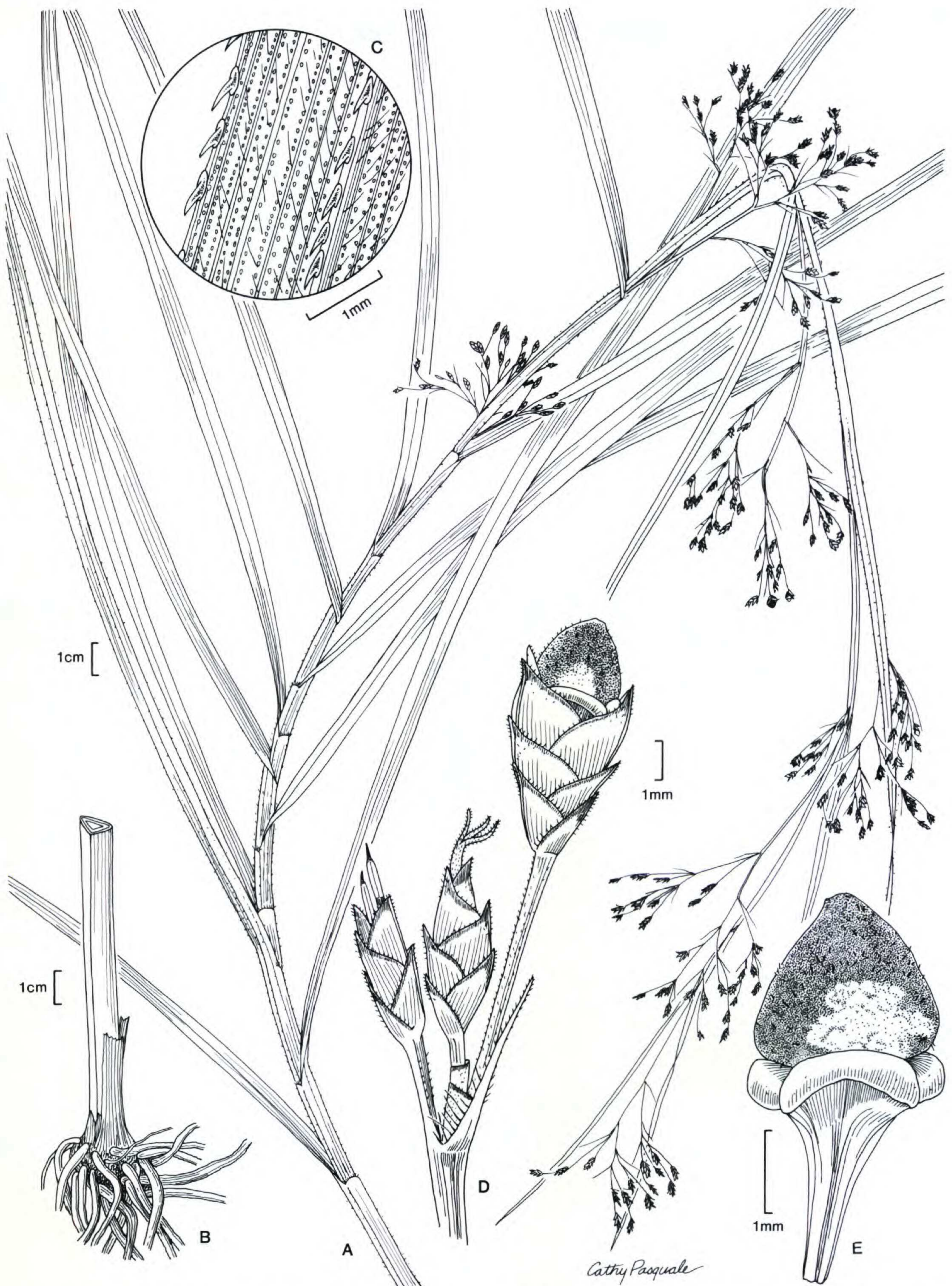


Figure 1. *Scleria skutchii* M. T. Strong & J. R. Grant. —A. Habit. —B. Culm base showing knotty rhizomes. —C. Detail of abaxial side and margin of leaf blade. —D. Detail of inflorescence branch showing staminate and pistillate spikelets. —E. Achene and hypogynium. (A and B from *Grant & Rundell 92-02062*; C–E from *Grant & Rundell 92-02087*.)

maturity; fertile scale reduced, narrowly obtrullate, as long as the sterile, the apex like the sterile. Staminate scales many, the lower similar to pistillate, 2.0–2.5 mm long, 1.5–2.0 mm wide, the upper scales (hidden at apex) ovate-lanceolate, 1.8–2.0 mm long, ca. 1.0 mm wide, membranous. Stamens 2 or sometimes 3 in terminal scales, the filaments connate at base; anthers exerted at anthesis, narrowly lanceolate, pale yellow, 1.3–1.5 mm long, basifixed, thecae parallel, longitudinally dehiscent, the apex with a sharp, shiny, bristlelike appendage, 0.3–0.5 mm long. Style 3-branched, the unbranched part glabrous, 0.2 mm thick, the branches scaly. Hypogynium long-stipitate at base, 3-lobed at apex, the lobes rounded-obtuse, red-blotched, the margin revolute; cupula long-stipitate, 3-lobed. Achene ovoid, narrowly rounded to recurved summit, 4–5 mm long (including hypogynium), 2–2.5 mm wide, purple, variegated with white above the lobes of the hypogynium, sparsely pilose, with trichomes scattered or in indistinct lines.

Scleria skutchii occurs on steep slopes in rainforest and second growth thickets bordering open habitat such as fields, roadsides, and rivers.

This species is named in honor of Alexander F. Skutch, the first collector of this plant and eminent naturalist who has explored the American tropics for well over 60 years, writing about the tropical rainforest and its inhabitants, particularly birds and plants from his tropical farm in Costa Rica. *Scleria skutchii* is here described in collaboration with Jason R. Grant of the University of Maryland, College Park, Maryland (MARY). Grant has recently made some superb flowering and fruiting collections of this plant in Costa Rica, which have been of great value in describing this species.

Adams (1994) considers plants here described as *Scleria skutchii* to be conspecific with *S. macbrideana* Gross. *Scleria skutchii* is closely related to *S. macbrideana*, but differs in a number of characters. The leaves of *S. skutchii* are pilose abaxially; the inflorescence becomes pendulous at maturity with elongate and flexuous branches; the prophylls of lateral branches are long-ciliate at base; the spikelet pedicels are elongated up to 1 cm; and the achenes are ovoid, narrowly rounded to a slightly recurved tip, with short hairs that are scattered or in indistinct lines. The leaves of *S. macbrideana* are smooth; the inflorescence is erect and spreading at maturity; the branches are stiff, ascending to divaricate; the prophylls are not ciliate at base; the spikelets are sessile or on pedicels less than 1 cm long; and the achenes are conical, with distinct horizontal lines of minute hairs.

A number of other scandent and semi-scandent species of *Scleria* sect. *Scleria* occur in Central America and northwestern Colombia (Depts. Antioquia and Chocó). The most common is *S. secans* (L.) Urban, which can form impenetrable thickets. Although this species shares the same scrambling, vinelike habit of *S. skutchii*, it is not closely related. *Scleria secans* is readily distinguished from *S. skutchii* by its contraligule, which bears a scarious appendage at the apex; pistillate spikelets with 4 scales; short hypogynium; and shiny white, globose-ovoid achenes that are rounded at the apex. The widespread, neotropical species *S. flagellum-nigrorum* has close affinities to *S. skutchii*. It differs in having stiff panicle branches; spikelet pedicels less than 5 mm long; short hypogynium; and ellipsoid-globose achenes, 3–3.5 mm wide, with a rounded apex that bears a blunt, obscurely curved tip. Two other species that share the scandent habit of *S. skutchii* but are not otherwise closely related are *S. bracteata* Cavanilles and *S. vaginata* Steudel. *Scleria bracteata* can be readily distinguished from *S. skutchii* by its terminal and upper 1(–2) axillary inflorescence panicles that bear only staminate spikelets and lower axillary panicles that bear only pistillate spikelets; in contrast, all inflorescence panicles of *S. skutchii* bear both staminate and pistillate spikelets. *Scleria vaginata* can be readily distinguished from *S. skutchii* by its wing-angled sheaths; those of *S. skutchii* are wingless.

Paratypes. COSTA RICA. **Puntarenas:** between Golfo Dulce and Río Térraba, 30 m, Dec. 1947, *Skutch 5398* (US); above Golfito along trail to the television tower, 100–300 m, 8°38'N, 83°10'W, 27 & 28 Jan. 1967, *Burger & Matta U. 4736* (BM, F); Esquinas Ridge, Osa Peninsula, 150–250 m, Jan. 1983, *Gómez 19662* (BM, CR, MO); Golfito, along the 7 km road from the soccer field to the microwave transmitter tower above town, ca. 300 m, 8°38'N, 83°11'W, 8 Jan. 1992, *Grant & Rundell 92-1781* (BM, CR, US); Canton Golfito, Refugio Nacional de Fauna Silvestre Golfito, 2 km NW of Golfito on the road to Briceño, 8°38'N, 83°13'W, 25 Dec. 1992, *Grant & Rundell 92-02073* (CR, F, US); Canton Osa, Osa Peninsula, on road from Rancho Quemado toward Drake, 24 Dec. 1992, *Grant & Rundell 92-02062* (B, BM, C, CR, F, MEXU, MICH, MO, NY, TEX, UCLA, US). COLOMBIA. **Dept. Antioquia:** Pavarandó, bosque junto al puente sobre el Río Pavarandó, 150–200 m, 5 Mar. 1987, *Fonnegra et al. 1770* (HUA, MO).

Below is a key to the scandent species of *Scleria* sect. *Scleria* that occur in Central America and the departments Antioquia and Chocó in Colombia. Unlike the erect to ascending culms of other species of *Scleria* sect. *Scleria*, the habit of these species is typically vinelike. At maturity, the culms are greatly elongated with many nodes and clamber or are scandent over other vegetation. Although *S.*

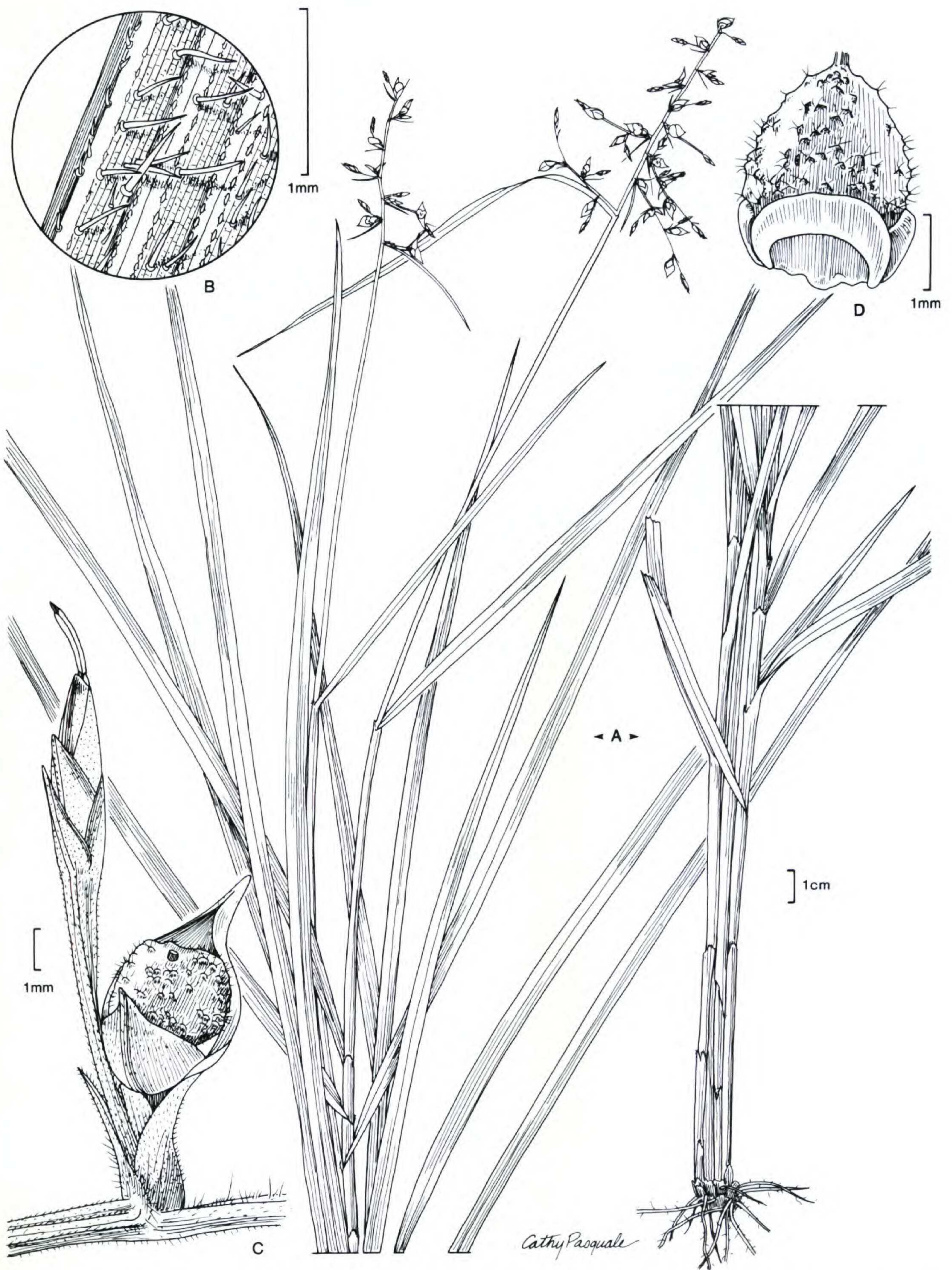


Figure 2. *Scleria triquetra* M. T. Strong. —A. Habit. —B. Detail of abaxial side and margin of leaf blade. —C. Detail of inflorescence branch showing staminate and pistillate spikelets. —D. Achene and hypogynium. (A from Oldeman T.922; B from de Granville 3751; C from de Granville 1496; and D from de Granville et al. 9777.)

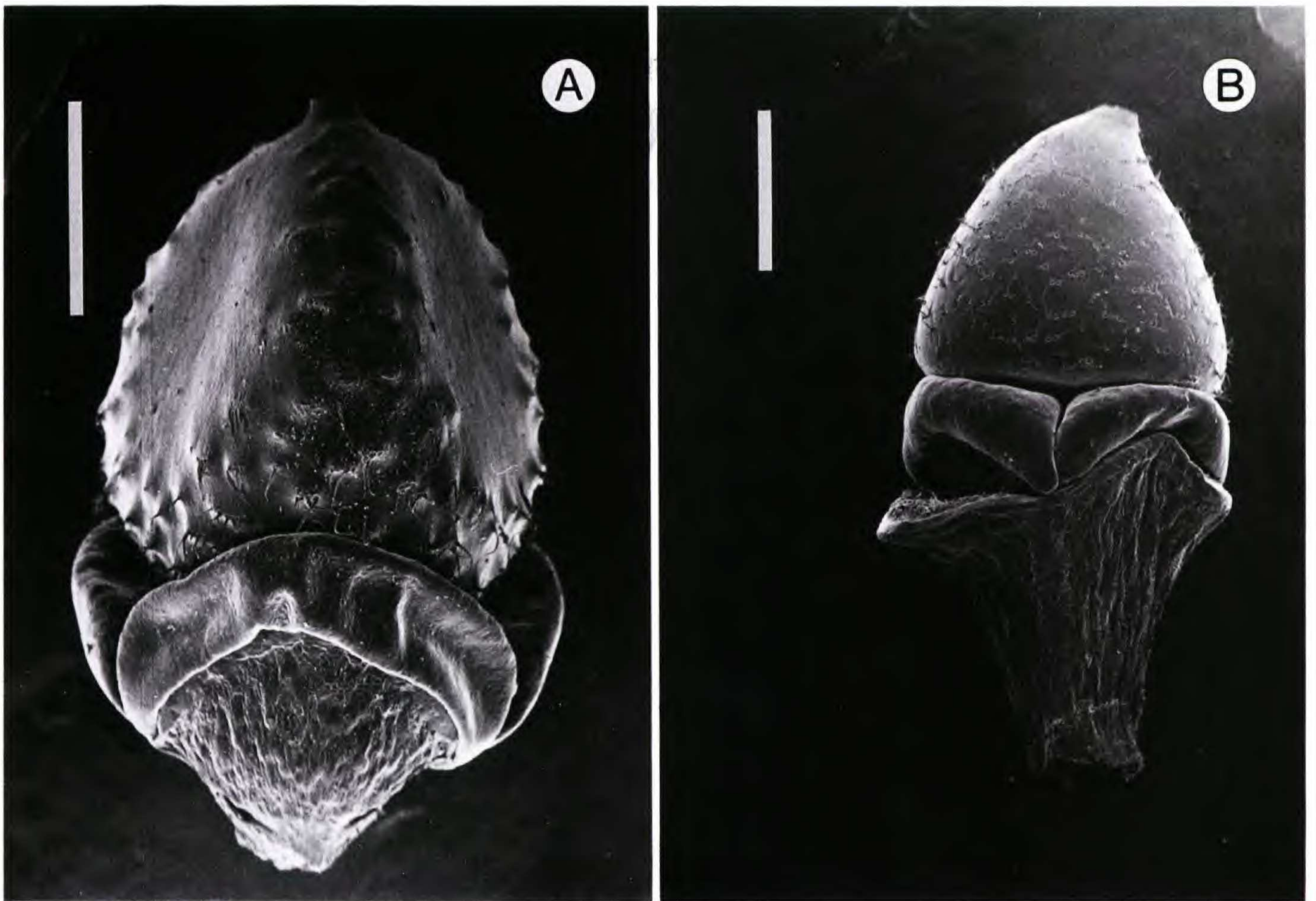


Figure 3. SEM photomicrographs of *Scleria* achenes with hypogynium and cupula attached. Scale bar = 1 mm. —A. *Scleria triquetra*. —B. *Scleria skutchii*. (A from *de Granville et al.* 9777 and B from *Grant & Rundell* 92-02087.)

macbrideana was described from Peru (Macbride, 1931), and I have seen no specimens from Central

America or northwestern Colombia, I have included it in the key for comparison.

KEY TO THE SCANDENT SPECIES OF *SCLERIA* SECT. *SCLERIA* THAT OCCUR IN CENTRAL AMERICA AND NORTHWESTERN COLOMBIA

- 1a. Contraligule of the sheath bearing a scarious appendage at the apex *S. secans*
- 1b. Contraligule of the sheath acute or rounded, the apex entire or with a fringe of hairs.
 - 2a. Terminal and 1(-2) upper axillary inflorescence panicles strictly bearing staminate spikelets, the lower axillary panicles strictly bearing pistillate spikelets *S. bracteata*
 - 2b. All inflorescence panicles bearing both staminate and pistillate spikelets.
 - 3a. Sheaths winged on the angles *S. vaginata*
 - 3b. Sheaths not winged on the angles.
 - 4a. Hypogynium short; mature achene ellipsoid-globose, 3-3.5 mm wide, the apex rounded with a blunt, obscurely curved tip *S. flagellum-nigrorum*
 - 4b. Hypogynium long-stipitate; mature achenes conical or ovoid, 2-2.5 mm wide.
 - 5a. Mature inflorescence panicles erect and spreading with stiff, ascending to divaricate branches; prophylls of lateral branches eciliate at base; spikelet pedicels sessile or less than 1 cm long; achenes conical *S. macbrideana*
 - 5b. Mature inflorescence panicles pendulous with elongate and flexuous branches; prophylls of lateral branches long-ciliate at base; spikelet pedicels elongate, up to 1 cm long; achene ovoid, narrowly rounded to recurved summit *S. skutchii*

Scleria triquetra M. T. Strong, sp. nov. TYPE: French Guiana. Camp no. 3, Roche no. 1 Akouba Booka Goo Soula, Bassin du Haute, 500 m au Sud-Ouest, 160 m, 2°36'N, 54°01'W, 27 Aug. 1987, *de Granville et al.* 9777 (holotype,

US sheet #3117503; isotypes, CAY, P). Figures 2, 3A.

Species haec a *Scleria huberi* C. B. Clarke differt foliis 3-8 mm latis, infra papillos minutos seriales; contraligula vaginae triangulari apice acuta; inflorescentiis 1(-2) pan-

iculatis; spiculis pistillatis 4 squamis; acheniis apice apiculatis, trigonis, lateribus leviter concavis laevibus in angulis tuberculis trichomatibus.

Rhizomatous perennial, ascending to scandent. Culms trigonous, 0.5–1.2 m tall, 2–3 mm wide, spinulose on margins, strigose on sides, dark red near base. Leaves 6–7; blades 3–8 mm wide, short on basal sheaths, up to 5 dm long on cauline sheaths, 3-costate, greenish to pale brown, glabrous and smooth adaxially, cellular-reticulate, minutely papillate abaxially in rows, particularly along veins, mixed with erect, stiff, crystalline, pustulate-based trichomes, scabrous on margins, antrorsely spinulose on midrib beneath, long-acuminate to blunt tip; sheaths distinctly veined, strigose, with pustulate-based hairs, particularly on veins, spinulose on margins, bright red or brownish to reddish brown, with a triangular contraligule, 3–5 mm long, minutely ciliate on margin, the veins straight, not anastomizing at the subacute apex. Inflorescence a single, terminal, open panicle or sometimes a smaller second one below, 10–20 cm long; involucre bract 1, leaf-like, 2–7 mm wide, up to 25 cm long; branches trigonous, stiff, ascending to divergent, copiously ciliate-scabrous on angles and sides, intermixed with long, crystalline trichomes, the short prophylls on lateral branches with a dark, reddish brown to blackish gland at base; bractlets linear-setaceous, scabrous on margins and midvein beneath, ciliate on margins at base, with long crystalline trichomes. Spikelets unisexual; pistillate spikelets 1-flowered, ovate, 5–7 mm long, 2–3 mm wide, expanding with maturing achene, sessile to short-pedicelled; staminate spikelets many-flowered, oblong-ovate, ca. 5 mm long, 1–2 mm wide, on pedicels up to 5 mm long. Pistillate scales 4 (including the reduced fertile scale); sterile scales ovate, 4–6 mm long, 2.5–4 mm wide, 1-nerved, curvate-keeled, brown to dark brown, dark reddish brown to purple-black on margins and at apex, glabrous or scabrous on sides near apex, the keel straight to slightly recurved at maturity; fertile scale reduced, narrowly lanceolate, as long as the sterile, the apex acuminate. Staminate scales many, the lower three like the pistillate, scabrous on sides, the upper oblong-ovate, membranous, brown to reddish brown, with acute apex, 3–4 mm long, 1–2.5 mm wide. Stamen 1; anthers exerted at anthesis, 2–2.5 mm long, basifixed, thecae parallel, longitudinally dehiscent, the apex with a triangular reddish appendage, 0.2–0.4 mm long. Style 3-branched, $\frac{1}{3}$ to $\frac{1}{2}$ length of style, the branches scaly. Hypogynium with 3 broadly rounded to subtruncate lobes, pale green or yellowish, smooth, with thickened, revolute margin, the cupula with 3 broad-

ly rounded lobes. Achene trigonous, broadly ovoid, 3.5–4 mm long (including hypogynium), 2.4–3 mm wide, with slightly concave sides, whitish to grayish white, apiculate at apex, the angles with tubercles bearing tufts of trichomes.

Scleria triquetra occurs in open to semi-open habitat such as thickets, coppices, forest bordering creeks, rivers, and trails, and in clearings caused by tree falls.

The distinguishing characters of *Scleria triquetra* that separate it from most other species of *Scleria* sect. *Scleria* in the Neotropics are its trigonous achenes with concave sides and deeply lobed hypogynium with thickened, revolute margins. Species of *Scleria* sect. *Scleria* in the Neotropics typically have globose, ovoid, or ellipsoid achenes that are at most obscurely angled. An exception is *S. parallela* Clarke, presently known only from Colombia and Venezuela. This species also has trigonous achenes but is not related to *S. triquetra*. The achenes of *S. parallela* are minutely transversely verrucose over the entire surface and the hypogynium has short, ovate, truncate lobes. *Scleria triquetra* is closely related to *S. huberi* in habit, inflorescence, and floral morphology, but differs from it in a number of characteristics. The leaf blades of *S. triquetra* are narrow (3–8 mm wide) and have minute papillae concentrated in rows along the veins on the abaxial surface (Fig. 2B); the contraligule of the sheath is triangular with a subacute apex; there are 1(–2) inflorescence panicles from the upper sheaths; the pistillate spikelets have 4 scales; and the achenes are apiculate at the apex, trigonous, with smooth slightly concave sides, the angles with tubercles bearing tufts of trichomes. The leaf blades of *S. huberi* are wider (10–24 mm wide) and lack the minute papillae along veins on the abaxial surface; the contraligule of the sheath is short and rounded; there are (1–)2–3 inflorescence panicles from the upper sheaths; the pistillate spikelets have 6 scales; and the achenes are prominently beaked, ellipsoid-globose, with tubercles of trichomes evenly distributed over the surface.

Paratypes. FRENCH GUIANA. Tumuc Humac, frontière Guyane-Suriname, Nord du Kassabatiki, le long du chemin indien joignant la Ouarémapaan'au Mapaoni, 370 m, 6 Sep. 1972, *de Granville 1496* (CAY); massif des Emerillons, base du versant sud, 200 m, 6 Sep. 1980, *de Granville 3751* (CAY); massif des Emerillons, centre sud, ca. 250 m, 10 Sep. 1980, *Cremers 6613* (CAY); montagne Alikéné, rive gauche du Bas-Camopi, 30 Aug. 1973, *Oldeman T.922* (CAY); montagne Bellevue de l'Inini, zone orientale, versant sous le vent, 650 m, 27 Aug. 1985, *de Granville et al. 7879* (CAY, NY, P, U). BRAZIL. **Pará:** Jari, estrada do Munguba, km 14, 16

Apr. 1969, *Silva 2199* (INPA, MO), estrada entre Monte Dourado e Munguba, km 4, 18 May 1969, *Silva 1977* (INPA, MO, NY).

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